

WHAT IS CLAIMED IS:

1. A reflective light processing element, comprising:
a substrate;
a dielectric layer formed on the substrate;
5 a conductive trace formed on the dielectric layer, the conductive trace
allowing charges trapped at the dielectric layer to escape; and
a plurality of ribbons formed above the substrate and the conductive trace.
2. The reflective light processing element of claim 1, wherein said trapped
charges are present at least on the surface of the dielectric layer.
- 10 3. The reflective light processing element of claim 1, where said trapped
charges are formed, with respect to the dielectric layer, during operation of said
reflective light processing element.
4. A reflective light processing element, comprising:
a substrate;
15 a dielectric layer formed on the substrate;
a conductive trace formed on the dielectric layer, the conductive trace
allowing charges trapped in the dielectric layer to escape; and
a plurality of ribbons formed above the substrate and the conductive trace.
5. A high contrast grating light valve comprising a silicon substrate;
20 a protective dielectric layer formed on the substrate;
a first set of ribbons each with a first average width W_a and a second set of
ribbons each with a second average width W_b , wherein the ribbons of the first set
alternate between the ribbons of the second set and, one of said first and second set
of ribbons is configured to move relative to the other to constructively and
25 destructively interfere with an incident light source having a wavelength X ;

wherein said substrate comprises a silicon wafer protected by a dielectric layer; and

a conductive trace formed at least partly on the protective layer and in electrical contact with said substrate, allowing charges trapped on the protective layer to escape.

6. The grating light valve of Claim 2, wherein said dielectric layer comprises silicon dioxide.

7. The grating light valve of Claim 2, wherein said conductive trace is comprised of aluminum.

8. The grating light valve of Claim 2, wherein width W_a is $\geq W_b$.

9. The grating light valve of Claim 2, wherein the top surfaces of the ribbons in said first set and the top surfaces of the ribbons in said second set and regions of the surface between the ribbons of the first set and second set have reflective surfaces.

10. The grating light valve of Claim 5, wherein the reflective surfaces comprise aluminum.